Nero Industries is a Global company developing and manufacturing high speed detection and suppression systems for protecting human life and other valuable assets at 3 different continents with more than 6 local production plants.

With 156 employees and 80 engineers, company is dedicated to develop safety and life support systems with its 6 plants which have a total of 110,000 m² production area and 3 regional offices with engineering and after sales support structures. Nero Industries has capability to finalize a mil-spec product from its own premises and finalizing the qualification with the experienced engineering capability.

**Vision**

We know that our products are needed to be the most reliable parts on the vehicle in order that we must produce the most reliable products for our partners to save most loved lives.

**Our Goal**

To give confidence to user that they are protected with the best solution all over the world. To be the first choice when there is a need for life protection systems.

[Map of Nero Industries locations]
During the operations the most dangerous threats are ATGM’s or RPG’s that can destroy a vehicle in seconds. Now there is ARES Automatic Fire Suppression System that is operating 24/7 with smart logic control system to provide the fastest and most reliable protection for the threats. The UV-IR optical detectors are able to detect the fires under 3 milliseconds and ARES controllers can activate the cylinders under 6 milliseconds enabling the total fire suppression time of 250 milliseconds.

ARES systems are able to suppress explosions, extinguish molotov cocktails or extinguish tyre fires instantly when the vehicle is under threat. All of the ARES System solutions are able to suppress the explosions which are caused by RPG and other anti tank missle (ATM) or other type of heavy armor piercing ammunitions. Generally, the armor piercing ammunitions ignite the ammunition or hydrocarbon fuels inside the vehicle creating inevitable destruction for the humans and valuable assets.
SYSTEM ADVANTAGES

Pyrotechnics

The proven pyrotechnics satisfies the maximum confidence at battlefield level for activation even if with very low battery level or cold temperatures.

Weight

All equipments are engineered for lower weight. All Extinguisher Cylinders are produced from aluminum materials to advance 40% mass reducing compared to conventional systems.

Speed of Detection

Triple IR and UV-IR detectors satisfy the Military Standards of MIL-PRF 62546C and STANAG 4317 false alarm rates with also detection time of 1-3 milliseconds which enables faster suppression time.

Dual Detection

All Triple IR and UV-IR detectors have spot heat sensors which can overcome when fire are started to increase slowly with smoke even if there is no optical detection capability.

HUMAN SAFETY

Explosion detection and fire suppression systems are used by the most developed army and countries to reduce the risk of fire casualties and priceless losses

As Nero Industries we always take human safety at the first place. During the suppression of fire or explosion we always consider to make no harm to any human. The gas concentration level and speed of gas dispersion and location of cylinders are always analyzed to ensure the fastest fire suppression time with no harm to human. ARES system is certified with SIL Level 3 which is one of the highest safety level in the vehicle fire suppression market.

CERTIFIED, REGISTERED, INSPECTED ACCORDING TO
## FIRE SUPPRESSION SYSTEM CONTROLLER SELECTION

<table>
<thead>
<tr>
<th>Controller Unit</th>
<th>Zones</th>
<th>Stanag 4317</th>
<th>Max Cylinder</th>
<th>Max Detector</th>
<th>Thermocouple</th>
<th>CANbus</th>
<th>Shutdown Timer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ares I Controller</td>
<td>1 – 2</td>
<td>✓</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ares II Controller</td>
<td>1 – 4</td>
<td>✓</td>
<td>6</td>
<td>6</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ares II+ Controller</td>
<td>1 – 4</td>
<td>✓</td>
<td>12</td>
<td>6</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ares III Controller</td>
<td>1 – 6</td>
<td>✓</td>
<td>12</td>
<td>12</td>
<td>4</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ares IV Controller*</td>
<td>1 – 6</td>
<td></td>
<td>12</td>
<td>12</td>
<td>4</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ares Manual Controller</td>
<td>1 – 4</td>
<td></td>
<td>4</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ares UV IR Controller Detector</td>
<td>1 – 2</td>
<td>✓</td>
<td>4</td>
<td>4 (+1)**</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ares M Controller</td>
<td>1 – 4</td>
<td></td>
<td>4</td>
<td>4</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

*ARES IV Controller is only for MIL-PRF 62546C Standard application with small and big fire  
** ARES Detector controller is also an UV-IR detector and additional 4 detectors can be connected

### BEST PRACTICE SELECTION FOR VEHICLE SYSTEMS

## VEHICLE BODY EXTINGUISHER

Vehicle body extinguishers are unique design for best practises gained in the Middle East. The new generation vehicle fleets have ability to conduct riot control operations also city wars and also they might be used as defence with their remote control weapon stations and militaries do not want to have different capability of vehicles to engage different scenarios therefore body extinguishers are vital for riot control and wars.

![Ares III Controller Unit](image1.png)  
![Body Nozzle](image2.png)  
![Body Extinguisher Cylinder](image3.png)
BEST PRACTICE SELECTION FOR VEHICLE SYSTEMS

CREW FIRE SUPPRESSION

For Single Shot Crew Fire Suppression
- 2 Cylinders up to 9 m³
- 3 Cylinders up to 12 m³
- 4 cylinders up to 16 m³

For Double Shot Operated Systems the number of cylinders shall be doubled to perform the best possible suppression system with the highest reliability.

During the activation of cylinders due to conditions cylinders may not be able to activate well they can be clogged or unplugged but the system is automatically checking for the available cylinders to perform the best suppression at once. When the fire suppression cylinders are activated the cylinders cannot be used again until next refilling. When the cylinders are used one time, the vehicle can not be protected against RPG no more or Anti Tank Guided Missile (ATGM) or fire explosions therefore the vehicle cylinders shall be changed at logistics depot or factory to regain the fire suppression ability to overcome this problem. Nero installs the second suppression cylinders for double shot operation capability to lower the necessity of logistics for the vehicle life time.
ENGINE FIRE SUPPRESSION

Due to new evolved UV-IR Detector which can detect as spot heat detector or can detect as IR or UV detector individually. The detector is thermally calibrated to overcome the IR blindness and supported with UV to overcome the false alarm conditions at engine compartment.

Nero suggests to use double shot operated system solutions for the engine compartment to maintain the best suppression capability as automatic system can activate the cylinders when the vehicle is at high speed and most of the suppression gas might lose its concentration level to suppress the fire then a second cylinder is needed to suppress the fire when the vehicle is not in danger and can be stopped and manually suppress the fire.
VEHICLE TIRES EXTINGUISHER

When vehicle tires are in fire it is nearly getting impossible to extinguish them without a fire brigade. It is always possible for a military vehicle with high loads and heavy duty operation might catch fire or during riot control operations the tyres can be easily burned by angry mobs. Without the tyres the vehicles lose mobility and getting easy targets. Tyre extinguisher systems are shown in the below picture.

FUEL TANK EXTINGUISHER

Due to new evolved UV-IR Detector which can detect as spot heat detector or can detect as IR or UV detector individually. The detector is thermally calibrated to overcome the IR blindness and supported with UV to overcome the false alarm conditions at engine compartment.
**ARES IV CONTROLLER UNIT (MIL PRF 62545)**

- The 100% Isolated High Level Immunity Multi Compartment Control Box receives detection signals from engine, crew and other protected compartments and activates the fire extinguishing system.

- DC-DC Galvanically Isolated microprocessor based electronics, enables flexibility to fit specific system configurations and operating logic. The control panel includes activation and system test and warning signals, manual activation, automatic activation and system test features. Modern CANBUS serial communication port enables connection to vehicle main control system and can be used for maintenance and trouble-shooting.

**FEATURES**

- High speed response - less than 5 msec
- Alarm logging until next reset
- Automatic and manual Built In Test (BIT)
- Accepts input signals from optical detectors, thermocouples and thermal wire
- CANBUS (J-1939) compatible
- Automatic extinguisher activation
- Integral Direct Manual activation
- Accepts external manual activation inputs
- MTBF minimum 120,000 hours
- Combat / Peace Mode
- Manual activation and output signal for every compartment
- Fault led indication for every cylinder and detectors on vehicle diagram
- Alarm LEDs for every compartment
- Power Supply: 24 VDC nominal (18-32V)
- Power Consumption: 450 mA @ 24 VDC
- Weight: 1900 gr ± 290 gr (Depends on Config)
- Dimensions WxDxL: 180±5 x 67±2 x 149±5 mm
- UL, CE GOST-R Certification
- IP67 Water and dust ingress protection
- Salt spray test resistance 800 hours

16 Detector (Programmable function)  
12 Cylinders (Crew (4) Engine (2) Tires (2) Body (4))  
Double shot features (Crew and Engine)  
Manual buttons provide activation independently from electronic system  
datalog can be done with CANBUS.

DC/DC Isolation for complete system with special circuitry design

5 input:
- Input 1: Vehicle ignition switch (‘NO’ contact, switching either to battery (+) )
- Input 2: Black out input (‘NO’ contact, switching either to battery (-) )
- Input 3: Emergency input (‘NO’ contact, switching either to battery (-) )
- Input 4: Configurable digital inputs (‘NO’ contact, switching either to battery (-) )
- Input 5: Configurable digital inputs (‘NO’ contact, switching either to battery (-) )

4 output (250mA 24V DC):
- Output 1: Master warning (250mA @ 24VDC)
- Output 2: Crew fire alarm (250mA @ 24VDC)
- Output 3: Engine fire alarm (250mA @ 24VDC)
- Output 4: Crew fan controller (250mA @ 24VDC)
**ARES III CONTROLLER UNIT (STANAG 4317)**

- The Multi Compartment Control Box receives detection signals from engine, crew and other protected compartments and activates the fire extinguishing system.

- Microprocessor based electronics, enables flexibility to fit specific system configurations and operating logic. The control panel includes indications and warning signals, manual activation, automatic activation, system test features.

- Modern CANBUS serial communication port enables connection to vehicle control system and can be used for maintenance and trouble-shooting.

**FEATURES**

- High speed response - less than 5 msec
- Alarm logging until next reset
- Automatic and manual Built In Test (BIT)
- Accepts input signals from optical detectors, thermocouples and thermal wire
- CANBUS (J-1939) compatible
- Automatic extinguisher activation
- Integral Direct Manual activation
- Accepts external manual activation inputs
- MTBF minimum 120,000 hours
- Combat / Peace Mode
- Manual activation and output signal for every compartment
- Fault led indication for every cylinder and detectors on vehicle diagram
- Alarm LEDs for every compartment
- Power Supply: 24 VDC nominal (18-32V)
- Power Consumption: 280 mA @ 24 VDC
- Weight: 1900 gr ± 290 gr (Depends on Config)
- Dimensions WxDxH: 180±5 x 67±2 x 149±5 mm
- UL, CE GOST-R Certification
- IP67 Water and dust ingress protection
- Salt spray test resistance 800 hours

16 Detector (Programmable function)
12 Cylinders (Crew (4) Engine (2) Tires (2) Body (4))
Double shoot features (Crew and Engine)
Manual buttons provide activation independently from electronic system
datalog can be done with CANBUS.

5 input
- **Input 1**: Vehicle ignition switch (‘NO’ contact, switching either to battery (+))
- **Input 2**: Black out input (‘NO’ contact, switching either to battery (-))
- **Input 3**: Emergency input (‘NO’ contact, switching either to battery (-))
- **Input 4**: Configurable digital inputs (‘NO’ contact, switching either to battery (-))
- **Input 5**: Configurable digital inputs (‘NO’ contact, switching either to battery (-))

4 output (250mA 24V DC)
- **Output 1**: Master warning (250mA @ 24VDC)
- **Output 2**: Crew fire alarm (250mA @ 24VDC)
- **Output 3**: Engine fire alarm (250mA @ 24VDC)
- **Output 4**: Crew fan controller (250mA @ 24VDC)
ARES II+ CONTROLLER UNIT

- The Multi Compartment Control Box receives detection signals from engine, crew and other protected compartments and activates the fire extinguishing system.
- Microprocessor based electronics, enables flexibility to fit specific system configurations and operating logic. The control panel includes indications and warning signals, manual activation, system test features.
- Modern CANBUS (J-1939) serial communication port enables connection to vehicle control system and can be used for maintenance and trouble-shooting.

FEATURES

- Indication and warning signals
- Alarm logging until next reset
- Activates engine, crew, tires and body alarms simultaneously
- High speed response - less than 5 msec
- Automatic and manual Built In Test (BIT)
- 4 crew 2 engine 2 tires 4 body tubes activated
- 6 UV-IR detector and 2 thermocouple usable
- Fault led indication for every cylinder and detectors on vehicle diagram
- Accepts input signals from optical detectors, thermocouples and thermal wire
- CANBUS (J-1939) compatible
- Integral Direct Manual activation
- Accepts external manual activation inputs
- MTBF minimum 140,000 hours
- Power Supply: 24 VDC nominal (18-32V)
- Power Consumption: 170 mA @ 24 VDC
- Weight: 1880 gr ± 200 gr (Depends on Config)
- Dimensions WxDxH: 240.5±5 x 81±2 x 153±5 mm
- UL, CE GOST-R Certification
- IP67 Water and dust ingress protection
- Salt spray test resistance 800 hours

Connector J1
- Connector 24VDC D38999/24WB98PN
- Detector Power A
- GND B
- Detector COMM C-D-E-F
- Solenoid G-K
- Pressure H-J-L-M-N-P
- Output 1 R
- Input 2 S
- CANBUS T-U-V

Connector J2
- Connector 24VDC D38999/24WB19SA
- Detector Power A
- GND B
- Detector COMM C-D-E-F
- Cylinder_Detector G-J-L-N-R-T
- Cylinder_Pressure H-K-M-P-S-U
- Output V

Connector J3
- Connector 24VDC D38999/24WD19SN
- Detector Power A
- GND B
- Detector COMM C-D-E-F
- Cylinder_Detector G-J-L-N-R-T
- Cylinder_Pressure H-K-M-P-S-U
- Output V

8 Detector (programmable function)
12 Cylinders (Crew(4) Engine(2) Tires(2) Body(4))
Double Shoot Features (Crew and Engine)

Manual buttons provide activation independently from electronic system
data log can be done with CANBUS.

2 input
- Input 1 : Vehicle ignition switch (‘NO’ contact, switching either to battery (+) )
- Input 2 : Emergency input (‘NO’ contact, switching either to battery (-) )

2 output (250mA 24V DC)
- Output 1 : Engine Fire Alarm (250mA @ 24VDC)
- Output 2 : Crew Fan Controller (250mA @ 24VDC)
The Multi Compartment Control Box receives detection signals from engine, crew and other protected compartments and activates the fire extinguishing system.

Microprocessor based electronics, enables flexibility to fit specific system configurations and operating logic. The control panel includes indications and warning signals, manual activation and system test features.

**FEATURES**

- Indication and warning signals
- Overheat indication for engine compartment
- Activates engine and crew compartments
- High speed response- less than 6 msec
- Automatic and manual Built In Test (BIT)
- Accepts input signals from optical detectors, thermocouples and thermal wire
- Stanag 4317 compatible
- Integral Direct Manual activation
- Accepts external manual activation inputs
- MTBF minimum 140,000 hours
- Power Supply : 24 VDC nominal (18-32V)
- Power Consumption : 170 mA @ 24 VDC
- Weight : 1880 gr ± 200 gr (Depends on Config)
- Dimensions WxDxL: 240.5x5x 81±2 x 153±5 mm
- UL, CE 609-97 Certification
- IP67 Water and dust ingress protection
- Salt spray test resistance 800 hours

8 Detector (programmable function)
12 Cylinders ( Crew(4) Engine(2) Tires(2) Body(4) )
Double Shoot Features ( Crew and Engine )
Manual buttons provide activation independently from electronic system
datalog can be done with Stanag 4317

3 input
- **Input 1**: Vehicle ignition switch ( ‘NO’ contact, switching either to battery (+) )
- **Input 2**: Black Out input ( ‘NO’ contact, switching either to battery (-) )
- **Input 3**: Emergency input ( ‘NO’ contact, switching either to battery (-) )

2 output (250mA 24V DC)
- **Output 1**: Engine Fire Alarm ( 250mA @ 24VDC )
- **Output 2**: Crew Fan Controller ( 250mA @ 24VDC )
Ares M3 Controller Unit

- The Multi Compartment Control Box receives detection signals from engine protected compartments and activates the fire extinguishing system.
- Microprocessor based electronics, enables flexibility to fit specific system configurations and operating logic. The control panel includes indications and warning signals, manual activation, system test features, modern CANBUS (J1939) serial communication port enables connection to vehicle control system and can be used for maintenance and trouble-shooting.

Features

- Indication and warning signals
- Overheat indication for engine compartment
- Activates engine compartment
- High speed response
- Automatic extinguisher activation
- Accepts input signals from optical detectors, thermocouples and thermal wire
- CANBUS (J-1939) compatible
- Integral Direct Manual activation
- Accepts external manual activation inputs
- MTBF minimum 140,000 hours
- Power Supply: 24 VDC nominal (18-32V)
- Power Consumption: 75 mA @ 24 VDC
- Operating Temperature: -40°C to +71°C
- Weight: 620 gr ± 50 gr (Depends on Config)
- Dimensions WxHxL: 125±5 x 66±2 x 80±5 mm
- UL, CE GOST-R Certification
- IP67 Water and dust ingress protection
- Salt spray test resistance 800 hours

Connector J1
- Connector 24VDC
- 24VDC A
- GND B
- 24V From Main Power Switch D
- Power Signal E

Connector J2
- Connector 24VDC
- Cylinder detonator G-L-N-J-R
- Cylinder GND H-M-P-K-S
- Thermo Couple GND F
- Thermo Couple Sense A-B-C-D-E
- Spare D
- CANBUS U-T

5 Detector (programmable function)
4 Cylinders (Engine(4))
Manual buttons provide activation independently from electronic system
data log can be done with CANBUS.

2 input
- Input 1: Vehicle ignition switch (‘NO’ contact, switching either to battery (+))
- Input 2: Black Out input (‘NO’ contact, switching either to battery (-))

2 output (250mA 24V DC)
- Output 1: Engine Fire Alarm (250mA @ 24VDC)
- Output 2: Configurable digital inputs (‘NO’ contact, switching either to battery (-))
UV-IR CONTROLLER DETECTOR (STANAG 4317)

- With the advanced technology which is used, it comes into prominence of its class. The Detector Controller is the new model that can be installed in military tactical and combat vehicles.

- The Detector controller is the device which monitors up to 2 compartments. There is no need a separate control box with the usage of that device.

- The unit is micro controller ensures reliability in system and adjustment of features to a specific system. Control, set up, maintenance and diagnostics can be applied by way of CANBUS (J1939) Option.

- The Detector Controller governs the crew and engine system compartment system components, eliminates the need for a separate control box, reduces cabling, and is cost effective without degrading performance and reliability. This unit is ideal for control of less than three compartments.

**FEATURES**

- UV/IR Dual-Sensor
- Sensitivity to slow growth fires
- External detectors
- Monitor and activation of up to two compartments
- Immunity to false alarm
- Small / large fire discrimination optional
  - Automatic and manual Built-In Test (BIT)
- Indication and warning signals
- Overheat indication for engine compartment
- Activates engine and crew compartments
- High speed response- less than 3 msec
- Automatic extinguisher activation
- Accepts input signal from up to two
- CANBUS (J-1939) compatible
- Accepts external manual activation inputs
- MTBF minimum 150,000 hours
- Power Supply : 24 VDC nominal (18-32V)
- Power Consumption : 65 mA @ 24 VDC
- Operating Temperature : -55°C to +71°C
- Weight : 700 gr ± 50 gr (Depends on Config)
- Dimensions WxDxL: 96±0.2 x 58.3±0.2 x 137.4±0.5 mm
- UL, CE GOST-R Certification
- IP67 Water and dust ingress protection

**Output Pin Diagram**

- Connector 24VDC D38999/24WC35SN
- 24VDC 1
- Ground 2
- Cylinder_detonator 3-5-7-9
- Cylinder_Pressure 4-6-8-10
- Detector Power 11
- Output 12-13
- Input 14-15
- CANBUS 16-17-18
- Detector COMM 19-20-21-22

- Slow Fire Detection Efficiency
  - Max Distance
  - 100 degree view angle at all axes

- For Explosion Detection Range Please Contact with Us
ARES M1 CONTROLLER UNIT

FEATURES

- Indication and warning signals
- Activates up to three cylinders
- Operating Voltage 18-32 VDC
- Operating Temperature: -40°C to +71°C
- Weight: 620 ± 50g
- Dimensions WxDxL: 155±0.2x130±0.2x130±0.5 mm
- Salt spray test resistance 800 hours

2 input:
- **Input 1**: Vehicle ignition switch (‘NO’ contact, switching either to battery (+))
- **Input 2**: Black out input (‘NO’ contact, switching either to battery (-))

2 output (250mA 24V DC):
- **Output 1**: Engine fire alarm (250mA @ 28VDC)
- **Output 2**: Engine fan controller (250mA @ 28VDC)

ARES M2 CONTROLLER UNIT

FEATURES

- Indication and warning signals
- Activates up to three cylinders
- Operating Voltage 18-32 VDC
- Operating Temperature: -40°C to +71°C
- Weight: 620 ± 50g
- Dimensions WxDxL: 155±0.2x130±0.2x130±0.5 mm
- Salt spray test resistance 800 hours

2 input:
- **Input 1**: Vehicle ignition switch (‘NO’ contact, switching either to battery (+))
- **Input 2**: Black out input (‘NO’ contact, switching either to battery (-))

2 output (250mA 24V DC):
- **Output 1**: Engine fire alarm (250mA @ 28VDC)
- **Output 2**: Engine fan controller (250mA @ 28VDC)

EMERGENCY SWITCH

- The Emergency switch enables remote manual activation of the system extinguishers. The emergency switch can activate both the crew compartment and the engine compartment extinguishers, total up to three extinguishers.
- Manual activation can be performed even when the system main controller is disconnected the system. The remote manual activation switch is directly connected to batteries to enable immediate operation whenever needed.

FEATURES

- Indication and warning signals
- Activates up to three cylinders
- MTBF minimum 100,000 hours
- Operating Voltage 18-32 VDC
- Operating Temperature: -40°C to +70°C
- Weight: 490 ± 50g
- Dimensions WxDxL: 77.8±5 x 77.8±2 x 75±5 mm
- IP67 Water and dust ingress protection
- UL, CE GOST-R Certification
- Salt spray test resistance 800 hours

COLOR CODE

[Color Code Diagram]

RAL 3000  RAL 6019  RAL 9010  FS 33265

Optimal CARC Color Paint
CARC is easily deodorized after exposure to liquid chemical agents

Output Pin Diagram

- Connector 24VDC  MS 3102 14S-6P
- VIN 18-32VDC  A
- RTN  B
- Reserve  C
POWER BACKUP BOX

- Power Backup Box is a compact redundancy power box including super capacitors to supply the enough power to the fire suppression system for 2-8 hours after the vehicle main power is closed.
- The unit includes a maintenance toggle switch that enables shut off of power supply to the system for maintenance purposes such as jump starting, welding, changing the system components at the vehicle.

FEATURES

- 10 min to 3 hour power supply after vehicle main power shut-down acc to system design
- Power back-up in emergency situations
- MTBF minimum 100,000 hours
- Power Supply: 150 mA for at least 2 Hours of operation at room temperature after battery power is disconnected
- Operating Temperature: -40°C to +71°C
- Operating Voltage: 18-32 VDC
- Power Consumption 15 mA @24VDC
- Weight: 620 ± 50g
- Dimensions WxDxL: 115±0.5 x 60±0.5 x 114±0.2 mm
- Salt spray test resistance 800 hours
- IP67 water and dust ingress protection
- UL, CE GOST-R Certification

MAINTENANCE SWITCH BOX

The unit includes a maintenance toggle switch that enables shut off of power supply to the system for maintenance purposes such as jump starting, welding, changing the system components at the vehicle.

FEATURES

- Operating Temperature: -40°C to +71°C
- Storage Temperature: -40°C to +71°C
- Operating Voltage: 16-32 VDC
- Indication and warning signals
- MTBF minimum 250,000 hours
- Salt spray test resistance 800 hours
- IP67 water and dust ingress protection
- UL, CE GOST-R Certification
UV-IR OPTICAL DETECTOR (MIL-PRF 62546C)

- The Optical UV/IR Detector high speed response can be installed in military, tactical and combat vehicles.
- The detector is micro controller based enabling adjustment of sensitivity, reliability and other specialities to provide an exact application.
- With compatibility of Option, a serial communication port provides outputs to the main controller units of vehicle.
- Simultaneous detection of radiation in the UV and IR ranges of the electromagnetic spectrum (which are characteristic of fire) will come out from the detector as an output signal.
- All other types of radiation sources, not identified as fires, will be accepted as a false alarm and not be detected.

FEATURES

- UV/IR Dual-Sensor
- Thermal Sensor
- High Speed Response - less than 3 msec
- Advanced Software Algorithm
- Thermal Self Calibration
- 140°C Blind Detection
- Senses even slowly growing fire
- Automatic and Manual Built-In Test (BIT)
- Mean Time Between Failure (MTBF) Minimum 150,000 Hours
- Big/Small Fire Alarm Signal Discrimination
- Vibration and Shock resistance
- Salt spray test resistance 800 hours
- 10 years shelf life
- Power Supply : 24 VDC nominal (18-32V)
- Power Consumption : 50 mA @ 24 VDC
- Storage Temperature : -55°C to +150°C
- Operation Temperature : -51°C to +125°C
- Weight : 480 g ± 50g
- Dimensions WxDxH: 85±5 x 49±2 x 100±5 mm
- MIL-STD 461G Compatible – MIL-STD 810G Compatible
- MIL-STD 1275E Compatible

Output Pin Diagram

- Connector 64WDC MS3474W10-6P
- Power A
- GND B
- Detector COMM C

Slow Fire Detection Efficiency Max Distance

100 degree view angle at all axis

12.5x12.5 cm Pan Fire 90 cm
30x30 cm Pan Fire 250 cm
50x50 cm Pan Fire 270 cm

* For Explosion Detection Range Please Contact with Us
UV-IR OPTICAL DETECTOR (STANAG 4317)

- The Optical UV/IR Detector high speed response can be installed in military, tactical and combat vehicles.
- The detector is micro controller based enabling adjustment of sensitivity, reliability and other specialities to provide an exact application.
- With compatibility of CANBUS (J1939) Option, a serial communication port provides outputs the main controller units of vehicle.
- Simultaneous detection of radiation in the UV and IR ranges of the electromagnetic spectrum (which are characteristic of fire) will come out from the detector as an output signal.
- All other types of radiation sources, not identified as fires, will be accepted as a false alarm and not be detected.

FEATURES

- UV/IR Dual-Sensor
- High Speed Response - less than 3 msec
- Advanced Software Algorithm
- Senses even slowly growing fire
- 140°C Blind Detection
- Immunity to False Alarm according to STANAG 4317
- Discrimination - optional
- Automatic and Manual Built-In Test (BIT)
- CANBUS (J1939) Option
- MTBF Minimum 150,000 Hours
- Large/Small Fire Alarm Signal Discrimination
- Vibration and Shock resistance
- Salt spray test resistance 800 hours
- 10 years shelf life
- Power Supply : 24 VDC nominal (18–32V)
- Power Consumption : 50 mA @ 24 VDC
- Storage Temperature : -55°C to +150°C
- Operation Temperature : -51°C to +125°C
- Weight : 480 g ± 50g
- Dimensions WxDxL: 85±5 x 49±2 x 100±5 mm
- MIL-STD 461G Certificated - MIL-STD 810G Certificated
- MIL-STD 1275E Certificated

Output Pin Diagram

- Connector 24WDC MS3474W10-6P
- Power A
- GND B
- Detector COMM C

For Explosion Detection Range Please Contact with Us
TRIPLE IR (IR3) OPTICAL DETECTOR (MIL-PRF 62546C)

- Triple IR detector with high speed response can be installed in military tactical and combat vehicles.
- The detector is micro controller based enabling adjustment of sensitivity, reliability and other specialities to a exact application.
- This detector is mainly designed for use in engine compartments of military vehicles and for fire detection outside the vehicle.
- With compatibility of Option, a serial communication port provides outputs instant the main controller unit of vehicle.
- Simultaneous detection of radiation in the IR ranges of the electromagnetic spectrum (which are characteristic of fire) will come out from the detector as an output signal.

FEATURES

- 3 IR wave lengths
- Response time - less than 3 sec
- Sensitivity to slow growth fires
- Immunity to false alarm
- Automatic and manual Built-In Test (BIT)
- MTBF minimum 150,000 hours
- Power Supply : 24 VDC nominal (18-32V)
- Power Consumption : 50 mA @ 24 VDC
- Storage temperature : -55°C to +125°C
- Operation temperature : -51°C to +125°C
- Weight : 280 g ± 20g
- Dimensions WxDxL:104±5 x 42±2x 68±5 mm
- MIL-STD 461G - MIL-STD 810G Compatible
- MIL-STD 1275E Certified

Output Pin Diagram (optionally1)

- 24VDC
- GND
- Large fire signal out
- Small fire signal out
- Alarm Signal

Output Pin Diagram (optionally2)

- 24VDC
- GND
- Large fire signal out
- CANBUS

Slow Fire Detection Efficiency

Max Distance

100 degree view angle at all axis

12.5x12.5 cm Pan Fire 90 cm
30x30 cm Pan Fire 250 cm
50x50 cm Pan Fire 270 cm

For Explosion Detection Range Please Contact with Us
**SPOT HEAT DETECTOR**

- Nero Spot Heat Detector is the latest model being installed in tactical and armored vehicles.
- Heat detectors are used in confined areas for detection of fires around engine part of vehicle.
- The Spot Heat Detector is a thermistor type, enabling adjustment of temperature response by the controller part.

**FEATURES**

- Thermistor Type
- Temperature Set-up by the Controller
- MTBF Minimum 200,000 Hours
- IP 67 Protection
- Humidity: Up to 95%
- Easy installation
- Liability to Military Standards
- Detection Temperature Range: Between +180°C to +800°C
- Storage Temperature: Between -45°C to +180°C
- Power Consumption: During Activation 5μA
- MIL-STD-810G Compatible
- MIL-STD-1184 Compatible
- MIL-STD-461F CE102,CS101,CS114,CS115,CS116 Compatible
- MIL-STD-461F RE102 and RS103 Compatible

**ELECTRONIC SPOT HEAT**

- Electronic spot heat with Linear Active Thermistor Integrated Circuit (IC) comprise a family of analog temperature sensors that convert temperature to analog voltage.
- Low Cost Low Power Sensor feature enables preset spot heat detection at harsh engine and dirty environments.
- In addition, this electronic spot heat is immune to the effects of parasitic capacitance and can drive large capacitive loads.

**FEATURES**

- High Temperature: -40°C to +150°C
- Operating Voltage: +16 to +32V
- Liability to military standards
- Operating Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- MIL-STD 1275E Certified
- MIL-STD 810G Certified
- MIL-STD 461G Certified
- MIL-STD-1275 compatible
LINEAR HEAT SENSORS (SUT-W)

- Continuous Thermal Wire is being installed in armored vehicles.
- By detecting sudden increase of temperature it activates the fire suppression system to prevent engine damages.
- With easy installation and simple running logic, ensures to activate the engine compartments tubes by triggering signal to control box.
- Continuous thermal wires are used at low budget projects to enable reliable protection with single use acid resistant wire configuration. After each fire detection wires at the engine must be replaced to reuse the system.

FEATURES

- Single Use Preset Temperature Level Sensor
- Wide detection coverage throughout the protected compartment
- High Reliability
- Rigid Design
- Cable Diameter 6 mm
- Bend Radius : 150 mm
- Operating Temperature -55°C to +170°C
- Storage Temperature -55°C to +170°C
- MTBF Minimum 200,000 Hours
- Length -2m to 40 meters
- Preset Alarm Levels : 120 -150 -170 C

CONTINUOUS HEAT SENSOR (INCOCT-W)

- Ares INCOCT Wire enables the maximum protection with complete coverage of the engine or harsh enviroments in the vehicle.
- The wire can be used during the complete life time of the vehicle without any change need. Thanks to inconel coating and reliable technology it very sensitive to even low match fires.
- The detector wires are completely inside the inconel coating satisfying the premium emi emc and environmental protection with nearly 0 false alarm rates.
- The INCOCT Wire can resist temperatures up to 800°C and no maintenance or calibration required after or before installation.

FEATURES

- Self Restoring (returns to normal after excursions up to 870°C)
- Survival range to 870°C
- K-Type TC components
- Flexible
- Chemically Resistant
- Grounded and armoured to resist electronic interference
- The wire can continue to measure even cut into pieces.
- Operating and Storage Temperature : -55°C to +800°C
- Thickness : 6 mm
- Coating Material: Inconel Cover
- Measurement Type : K type Thermocouple
- Connection : A: Thermocouple 1
- B: Thermocouple 2 - C : Wire Shield
- MIL-STD 810G Tested
- MIL-STD 461G Tested
- MIL-STD 1275E Tested
PYROTECHNIC CYLINDERS (CREW - ENGINE)

- The Extinguisher is specifically designed for Armoured Vehicle Explosion suppression systems. The pyrotechnic cylinders are being used to satisfy less than 250 milliseconds of suppression time.
- The extinguisher contains environmental friendly fire suppression agent HFC227EA. The special design of the cylinders valve enables rapid valve opening. The agent is dispersed in the engine compartment via piping and nozzles.
- Cylinders are available in various capacities, compatible with either UL, CE, GOST-R standards. include safety devices such as safety relief valve.
- Pyrotechnical Cylinders have advantage being used at even low battery conditions to satisfy the maximum operation reliability.

FEATURES

- High speed response-less than 7 msec
- Visual pressure gauge
- Homogenous 360° agent dispersion
- Fast agent release and distribution
- Pyrotechnical activation
- Harmless to human health
- Refillable with field filling kit
- MTBF minimum 250,000 hours
- Extinguisher Agent : HFC227EA
- Breathing Assistant : Sodium bicarbonate
- (5% of total extinguishing agent weight).
  Cylinders Capacity : Various sizes between 3 to 6 kg
- Super pressurization : Dry Nitrogen.
- Cylinder Nominal Pressure : 42 Bar
- Operating Temperature : -55°C to +71°C
- Storage Temperature : -55°C to +71°C
- Humidity : Up to 95%
- Weight : 6 kg to 18 kg
- HFC227ea has no adverse effect below 0.1% concentration level to humans
- Shock and Vibration Tested
- IP67 Water and dust ingress protection
- UL, CE, GOST-R Certification

EXTINGUISHER SELECTION

EXTINGUISHER CODES

- DS - 8R - C - A
  - A: ALUMINUM
  - S: STEEL
  - C: CREW
  - E: ENGINE

- 1: 1.5 LITERS
- 2: 2.0 LITERS TYPE 1
- 22: 2.0 LITERS TYPE 2
- 3: 3.4 LITERS
- 4: 4.5 LITERS
- 6: 6 LITERS

COLOR CODE

- RAL3000
- RAL6019
- FS 33245
- RAL 9010

Cylinders must always be positioned vertically and have to be provided with the maximum allowable tilt angle for cylinders up to 15°.

Direct Dispersion Area Shall Not Interfere With Human Face

- 1.5m 95 ms
- 1m 30 ms
- 0.5m 14 ms
- 0°
- 15°
HORIZONTAL CYLINDER (BODY - TIRES - FUEL TANK)

- The Extinguisher is specifically designed for Armored Vehicle fire suppression systems. It is used to extinguish the fire on the body and tires of vehicle.

- The extinguisher contains environmental friendly fire suppression agent AFFFF. The special design of the cylinders valve enables rapid valve opening. The agent is dispersed at the piping and nozzles of vehicle.

- Cylinders are available in various capacities, conform to either UL, CE, GOST-R standards, include safety devices such as safety relief valve.

FEATURES

- High speed response-less than 10 msec
- Visual pressure gauge
- Fast agent release and distribution
- Solenoid activation
- Harmless to human health
- Refillable with field filling kit
- MTBF minimum 250,000 hours
- Extinguisher Agent : Liquid AFFFF(Biological)
- Cylinders Capacity : Various sizes between 8 to 10 kg
- Super pressurization : Dry Nitrogen.
- Cylinder Nominal Pressure : 45-100 Bar
- Operating Temperature : -32°C to +71°C
- Storage Temperature : -32°C to +71°C
- Humidity : Up to 95%
- Weight : 24-30 kg for 8-10 kg capacity
- Main Battle Tank Gun Fire Shock Tested
- IP67 Water and dust ingress protection
- UL, CE GOST-R Certification

EXTINGUISHER SELECTION

- Aluminum
- Steel
- Body & Tires
- 8 Liters
- 10 Liters
- Continuous Shot

COLOR CODE

Optimal CARC Color Paint
CARC is easily deodorized after exposure to liquid chemical agents
AEROSOL FIRE EXTINGUISHER GENERATOR

- The Nero Endusties AFEG-200 Aerosol Fire Extinguisher Generator is an environmental friendly Powdered Aerosol (SFE), listed on the EPA Halon Alternatives SNAP list as Powdered Aerosol A, designed for total flood fire suppression applications.

- The Nero Endusties AFEG-200 Aerosol is designed to extinguish and provide inertization for type A (solid fuel), B (liquid fuel), C (gas fuel) fires and type E (electrical) fires in defined enclosures.

- The extinguishing agent delivered by the system is a powdered aerosol created “in-situ” by a chemical reaction taking place in a non-pressurized container, delivering small dry powder highly effective particles (1-5 microns) floating in inert gases.

FEATURES

- Activation Time: Without significant delay (<20 ms)
- Storage: Cool and dry
- Function Temperature: -401/4°C to +851/4°C
- Fire Class: B (limited) and C according to DIN EN2
- Total Weight: ca. 1.13 kg
- Duration Of Aerosol Generation: ca. 5 s
- Volume To Be Protected: Max. 2.0 to 3.0 m³
- Shock and Vibration Tested
- IP67 Water and dust ingress protection
- MIL-STD-1184
- UL, CE GOST-R Certification

Pin Diagram

- Connector: V695234B1-10SL-4PN
- 24VDC: A
- GND: B
NOZZLE (TIRES - BODY COMPARTMENTS)

- Wiev angle is $90^\circ - 120^\circ$.
- Internal Diameter is 5 mm.
- Rate of Disperse is 50 or 60 liter/minute
- Type of material is 304 stainless or brass
- Durable to corrosion with the options of material
- Easy direction adjustability with symbol arrow on front side
- Weight: $20\,g \pm 5g$

<table>
<thead>
<tr>
<th>Nozzle Code</th>
<th>Nozzle Name</th>
<th>Orifis (mm)</th>
<th>Extinguisher Spring Angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>NE-P-44706</td>
<td>A51</td>
<td>5</td>
<td>$90^\circ$</td>
</tr>
<tr>
<td>NE-P-44707</td>
<td>A52</td>
<td>5</td>
<td>$120^\circ$</td>
</tr>
<tr>
<td>NE-P-44708</td>
<td>A53</td>
<td>5</td>
<td>$150^\circ$</td>
</tr>
<tr>
<td>NE-P-44709</td>
<td>A54</td>
<td>5</td>
<td>$180^\circ$</td>
</tr>
<tr>
<td>NE-P-44710</td>
<td>A61</td>
<td>6</td>
<td>$90^\circ$</td>
</tr>
<tr>
<td>NE-P-44711</td>
<td>A62</td>
<td>6</td>
<td>$120^\circ$</td>
</tr>
<tr>
<td>NE-P-44712</td>
<td>A63</td>
<td>6</td>
<td>$150^\circ$</td>
</tr>
<tr>
<td>NE-P-44713</td>
<td>A64</td>
<td>6</td>
<td>$180^\circ$</td>
</tr>
<tr>
<td>NE-M-21422</td>
<td>ENGINE NOZZLE ALU</td>
<td>3/8 INC (9.525 mm)</td>
<td>FULL CONE 120°</td>
</tr>
<tr>
<td>NE-M-21315</td>
<td>TIRES NOZZLE ALU</td>
<td>3/8 INC (9.525 mm)</td>
<td>FULL CONE 120°</td>
</tr>
</tbody>
</table>

ENGINE NOZZLE (TIRES - COMPARTMENTS)

- Engine nozzle are designed as conical structure in order to provide effective dispersion to the engine compartment.
- It is sealed against dust, oil, mud and rain with the help of the plug.
- Nozzles can be placed every side of the engine compartment with the well designed brackets.
- Engine nozzle is produced from light aluminum 5000 material are resisted against corrosion.
- Weight: $160g \pm 20g$

DEFLECTOR IS THE KEY PART FOR FIRE SUPPRESSION SYSTEM

- Deflector is the main part of the inflation suppression cylinders providing the $360^\circ$ dispersion to whole vehicle interior.
- After the activation of the fire extinguishers, fast and effective dispersion of the agent is provided by deflectors.
- According to placement of extinguisher inside the vehicle, its dispersion direction can be adjusted between up and down.
- Sieved structure of the deflector at the output port of the extinguisher protect the crew against the particles of the extinguishing agent.
- Weight: $390g \pm 50g$
UV-IR TEST LAMP

- Flame Detector Test Lamp is a specifically designed portable source of ultraviolet (UV) and infrared (IR) radiation for testing UV/IR flame detectors.
- The unit emits a wide band of UV radiation which includes the region of 185 to 270 nm and IR radiation which pulsates at a slow rate to simulate the “flicker” in a real fire.
- The hewed state-of-the-art electronics module allows the unit to simulate a real flame.
- The test lamp uses a highly specialized lens which allows transmission of the UV and IR radiation.
- The unit has an operating range of 3.3 feet or 1.0 meters from the detector. The Flame Detector Test Lamp is intended for use in military detectors applications.

FEATURES

- Emits UV and IR radiation similar to that produced by a real fire
- Activates UV/IR flame detectors as far as 3 feet or 1.0 meters away
- Highly portable
- Rugged and lightweight aluminum housing
- Momentary On-Off switch to conserve power
- O-ring seals provide moisture resistance
- Available with standard 120W adapters
- Carrying case included
- UV Output : UV-C Spectral Region
- IR Output : Mid-Infrared Spectral Region
- Operating Range : Typically (5-25cm) depend on optics and windows
- Operating Time : 3500 hour IR and 800 hour UV
- Operating Temperature : -20°C to +70°C
- Operating Humidity : 0-100% RH. Non-Condensing
- Ingress Protection : IP65

FIRE SUPPRESSION EXTINGUISHER SIMULATOR

- Extinguisher : DUD, NORMAL, EMPTY modes
- Double-Shot Test
- Possibility to use with external power supply
- Operating with both battery and 220VAC
- Power Input 12 VDC Adapter
- Military connector connection
- Indicator LEDS
- High Reliability
- Minimum Fire Current Tester
- Weight : 520 g ± 50g

Fire and Suppression System Test Kit

- 2 Test Lamps
- 4 Fire Extinguisher Simulators
- 2 Adapter 120W for Test Lamps
- 4 Adapter 12W for Fire Extinguisher Simulators
- Carrying Case
- Connection Wiring
STANDARDS & CERTIFICATIONS

Nero Industries is certified according to
ISO9001 : 2015
ISO14001 : 2008
ISO27001 : 2013
Facility Security Clearance Certificate

LABORATORY INFRASTRUCTURE

From scratch to final product’s complete design, manufacturing, testing according to
MIL-STD 810
MIL-STD 461
MIL-STD 1275E
at Nero Industries

İstanbul Office

Yenibosna Merkez Mah. 1. Asena Sokak
D Blok Ofis No: 44 - 45 Karat34 Plaza
34197 Bahçelievler / İstanbul

Bulgaria Office

6878 Cebel Bregovo No: 58
Bulgaria

Sakarya Factory

Adapazarı-Bilecik yolu 9. km
Karaçam Köyü Geyve / ADAPAZARı

Ankara Factory

AOSB 30 Ağustos Cad No:16
06909 Maliköy / Ankara / Türkiye
Tel : +90 312 504 54 53
Fax : +90 312 504 54 52

USA Orlando Office

1161 9101 Intl Dr 32815

www.neroindustry.com